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ABSTRACT

A study investigated differences in discourse styles that may affect second language listening comprehension. Ten amateur actors performed three speaking tasks: (1) reading aloud a short self-contained narrative; (2) acting out a memorized script; and (3) conversing with the researcher for 20-30 minutes. Excerpts of the recorded tasks in different discourse modes were analyzed for fundamental frequency, speech burst duration, duration of silence between speech bursts, and proportion of time devoted to speech. Results were compared for the discourse types. Analysis of the results for two variables (fundamental frequency and silence duration) found some significant differences between the discourse styles, with acting highest and conversation lowest in fundamental frequency. Acting showed the greatest amount of fluctuation around the mean fundamental frequency value (i.e., use of potential pitch range), and conversation the least. Duration of silences was also greatest in acting and shortest in conversation. Speech articulation occupied the greatest amount of time in conversation and the least in acting. Findings suggest that contrasting discourse styles or genres do have distinctive prosodic characteristics, and that conversational material is likely to be more difficult to comprehend than other discourse types, making careful selection and ordering of these materials essential. A 26-item bibliography is included. (MSE)

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8. Conversation as listening material: the prosodic bases of difficulty

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INTRODUCTION

Examination of current EFL listening comprehension materials shows three kinds of limitation. First, in the great majority of cases the listening model is intentionally RP, and deviations from this norm are largely absent. An exception to the rule is Whiteson and Mackin (1977) where the discussion participants have a variety of accents: Scots, Australian, South African, Welsh and New Zealand. Another source for work on accent variety is Hughes and Trudgill (1979), which exploits spoken texts in a range of British accents (Cockney, Liverpool, Belfast, Norwich, Glasgow, etc) either for advanced (EFL) comprehension work or for sociolinguistic applications.

A second limitation is communication style or discourse genre. The prevailing choice in current EFL listening comprehension materials selects from read aloud text, enacted dialogue, interview and conversation. The potential borderline between the last two activities is sometimes disregarded. In Scott and O'Neil (1977), one of the most imaginative and appealing sources for listening materials, the introduction refers to the 'interviews' (with real individuals, on topics of current social interest such as strikes, football hooliganism, etc). The introduction also refers to this same material as 'conversation'.

The versatility of the term has been pointed out by McGregor (1984) who cites the term being applied to '...job interviews, telephone calls, jokes and story-telling episodes, teacher-pupil exchanges, and a range of recorded psychiatric, psychotherapeutic and psychological investigative activities' (McGregor, 1984:73). By the same token the potential distinction between conversation and discussion has not been thoroughly investigated in discourse analysis and, understandably, has not been expoited in EFL listening materials. Crystal and Davy (1975) in a unique and very useful collection of spoken texts, refer to 'conversational extracts' which are clearly highly focussed in terms of topic. The term 'discussion' may be applicable to all of these extracts.

The vagueness and potential overlap of terms such as conversation, discussion and interview, which represent 'spontaneous speech' are

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often further complicated by the inclusion of certain types of scripted non-spontaneous speech (e.g. enacted dialogue, read aloud text) in some listening materials. In general terms, then, we do not find EFL listening materials reflecting the diverse totality of spoken language activities in the real world. This is hardly surprising, since as I have argued elsewhere (Johns-Lewis 1985b), an adequate framework for a taxonomy of spoken discourse does not exist, despite the availability of some bases for categorisation of spoken language events, e.g. Hymes (1972) and Gregory and Carroll (1975).

A third limitation of current EFL listening materials involves the selection of a specific language activity - lectures - for often quite specific academic fields (e.g. electrical engineering, biology). Not surprisingly, few listening comprehension courses have been published for use in an ESP context (but see McDonough (1978) A number of (unpublished) courses have been devised for particular ESP situations (e.g. Elliman no date) and there are both published (e.g. Williams 1985) and unpublished (Lynch 1981, Johns 1976) materials for listening practice with non-specific 'scientific' topics such as rates of population growth, food crops, earthquakes and the like. Presumably, the rationale for devising such materials, in an attempt to prepare non-native speakers for the lecture situation, is motivational. The use of genuine specialist lectures delivered within an actual tertiary education institution is fraught with difficulties which are well known. The debate on 'authentic' vs 'non-authentic' texts has been extensively treated elsewhere (See Widdowson 1976, Breen, Candlin and Waters 1979, Breen and Candlin 1980, and Breen 1985.)

What is important for the argument here is that 'simplified' lectures are likely to be different from 'authentic' lectures not only in specific linguistic features, but also phonetically. The prosodic differences (pitch range, pausing and tempo) between pedagogic delivery which is actually reading aloud, delivery before an uninitiated audience and delivery before an advanced, initiated audience are likely to be considerable, and could easily affect the comprehension of the material.

The limitations discussed above involve 1) exclusion of accents other than RP; 2) concentration on a subset of spoken language 'genres', some of which overlap in as yet unknown ways; 3) use of spontaneous and non-spontaneous speech with no clear understanding of the phonetic and prosodic differences between them. Obviously, language teaching forces choices on the teacher. Reasons for excluding accents other than RP from listening materials may not reflect lack of interest in accent variation, but may indicate, rather, a consciousness that learners wish to acquire the prestige norm. However, it is also valid to provide experience of the extent of variation within a particular variety of English as well as the

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way this variation structures social meaning. Such information is vital for the planning of languge instruction. The second limitation discussed above raises the issue of why particular spoken language activities or discourse types are selected. If language teaching is to make an informed choice as to which discourse types are worth including then a more satisfactory taxonomy of spoken texts would be useful. The third limitation highlights current ignorance of the differences between spontaneous and non-spontaneous speech (i.e. between unscripted and scripted texts) and of parameters along which such texts can vary.

PROSODIC INVESTIGATIONS OF SPEECH STYLE

A great deal is known about the segmental differences between formal speech and casual conversation. Features often mentioned in relation to casual speech include assimilation, elision, vowel centralisation, h-dropping, t/glottal stop variation. (See Brown 1977.) Relatively less is known about the prosodic differences between different speech styles, differences in pitch range, loudness range, segment and word duration, articulation rate, pause length anad pause distribution, for instance.

A number of studies have made comparisons between the prosodic characteristics of different speech styles. To be valid, such studies must compare the same speaker(s) operating in different speaking tasks. Few studies fulfill this condition. Clemmer, O'Connell and Loui (1979) found that experienced actors spoke faster and used longer and more pauses than inexperienced actors. This does not of course allow a conclusion to be drawn about pause in acting as opposed to other speaking tasks, but points rather to the pause characteristics of good acting. Duez (1982) studied pauses in political speeches (i.e. oratory), political interview, and casual interview, and found that non-silent pauses are significantly longer in casual interviews than in political interviews. She suggests this may be because the lack of time constraints in casual interviews allows the speaker to spend more time on false starts, hesitation, etc. She also found that articulation rate differed in the three styles, the fastest being political speeches, the slowest casual interviews. This represents a hierachy of degrees of practice, or preparation, or both. The fluency effect in political speeches is also reflected in the near total absence of filled pauses in political speeches. Her data cannot unfortunately be interpreted in a straightforward way as ONLY reflecting differences of speaking task, since different individuals performed different tasks. Barik (1979), comparing narration of a story, discussion of a film, prepared lecture, live translation and reading aloud, examined a number of delivery characteristics. There were, among other things, differences in pause duration, speech to silence ratio, articulation rate, and proportion of pauses at grammatical juncture. However Barik's study

is flawed in the same way as Duez's: he did not have the same individual perform different tasks. Fonagy's (1978) laryngographic study of pitch variation in ten emotions rendered by an actress finds that joy, sorrow and fear produced characteristic pitch levels and differing pitch ranges. However, since the study is based on one actress performing the genres it is not clear how far the pitch characteristics are generalisable across the population. Finally a study by Graddol (1985) examines fundamental frequency differences in read aloud texts (technical prose and dramatic dialogue), performed by 30 subjects. His fundamental frequency findings are broadly comparable to those of the experiment reported below. Graddol does not examine prosodic characteristics other than fundamental frequency.

THE EXPERIMENT

In view of the shortage of reliable information on non-segmental ways in which discourse styles differ from each other, an experiment was run which fulfilled the criterion mentioned above: the same subjects performed different speaking tasks in the same conditions. The subjects were 16 amateur actors aged 24-49 performing in three styles: reading aloud, acting and conversation. From these, 10 (5 males, 5 females) were selected by a panel of judges as being 'the best acting voices'. The choice of amateur actors as opposed to professionals was dictated by the limited funds available for the study. Actors were chosen because the investigation aimed to use speaking tasks that were a natural act of communication for the speakers. They were told that the author was interested in stylistic differences between different speaking styles. Being amateurs they represented a range of professions, and two were unemployed at the time of recording.

The 10 subjects were asked to read aloud a short self-contained narrative, to act a memorised script (i.e. without written text) as if for radio performance, and to converse informally with the analyst for 20-30 minutes. Each speaking task lasted approximately 30 seconds, and the same length of conversation was extracted from the taped conversation avoiding the first 5 minutes for 'warm up'. The recordings were made in a very quiet, sound-proofed (but not anechoic) room with the microphone approximately 10cm from the speaker's mouth. The tape recorder, a Dolby Super Seven Ferrograph (Half Track) was in an adjacent room on a direct connection lead in order to eliminate recording hum and the recordings were made at 37.5cm per second.

The method of analysis of fundamental frequency in the three discourse modes is fully reported in Johns-Lewis (1985b). It involved digitised pitch extraction on a mini-computer installation, using an autocorrelation algorithm. The difficulties of using this technique for pitch analysis are well known, cf

TABLE ONE

Mean fundamental frequency (Hz) for three discourse styles:

		Reading Aloud	Acting	Conversation
Males	Mean	128	142	101
	SD	32	39	20
Females	Mean	213	240	182
	SD	54	71	28

TABLE TWO

Speech burst duration (in seconds)

		Reading Aloud	Acting	Conversation
Males	Mean	2.1420	1.7535	3.4133
	SD	0.4875	0.4526	0.5710
Females	Mean	1.8115	1.5762	2.2889
	SD	0.3870	0.1564	0.8006

TABLE THREE

Mean silence duration (in seconds)

		Reading Aloud	Acting	Conversation
Males	Mean	0.6526	1.1524	0.5933
	SD	0.1607	0.4006	0.1891
Females	Mean	0.7342	0.9866	0.6842
	SD	0.1633	0.5400	0.1405

TABLE FOUR

Proportion of speech in text (percent)

		Reading Aloud	Acting	Conversation
Males	Mean	76.23	62.69	85.55
	SD	8.99	9.42	6.42
Females	Mean	72.44	62.94	79.47
	SD	8.11	4.66	6.44

Johns-Lewis (1985b and forthcoming). Although there are difficulties in the interpretation of the output of pitch algorithms, these difficulties are more significant for fine analysis of the pitch contour of an individual utterance than for relatively long stretches of discourse where the error rate is counteracted by the size of the sample - in this case 30 seconds at a sampling rate of 10 KHz.

RESULTS

Two aspects of the results have been analysed so far: long term tendencies in fundamental frequency and tendencies in the proportion of silence. The fundamental frequency results are fully written up elsewhere (John-Lewis 1985b). What follows is a summary.

..1 FUNDAMENTAL FREQUENCY
The fundamental frequency data are presented in Table One.

INTERPRETATION: The figures suggest that acting produces greater fundamental frequency variation than the other two modes. In other words the heightened fundamental frequency characteristics may serve a perceptual purpose, acted speech requiring greater articulatory force and projection. Conversely the conversation data display a relatively small amount of variation in fundamental frequency. This could account for the somewhat 'flatter' pitch profile of intimate conversation and its lower level.

..2 SILENCE
The proportion of silence in the talk time and the duration of speech burst are of course interdependent. The figures for speech burst duration are given in Table Two below.

INTERPRETATION: The figures in Table Two could be interpreted as showing that conversation induces longer speech bursts than acting does, with reading aloud falling part-way between the other styles. However this interpretation is not really justified. Although some attempt was made to control for sentence length in read aloud text and acting, sentences in the conversation data were longer (mean sentence length for read aloud text was 7.4 words, for acted text 6.7 words, and for conversation 17.5 words). The experiments ought to have used the conversation data as base and ensured that sentence length in the other two discourse modes was approximately the same. In other words although there is a clear hierarchical effect in speech burst duration, speech burst is not an independent variable and the figures are not in themselves therefore significant.

A second and more significant finding to emerge from analysis of the silence parameter is the duration of silences between speech bursts. The figures are given in Table Three.

INTERPRETATION: The longer silences between speech bursts in acting are probably the result of at least two separate influences: one is the greater articulatory effort involved in public, projected speech. A second is the dramatic effect of silence. Silences in acting are deliberate, planned to convey a particular connection, emphasis or shade of feeling. In spontaneous speech, silences are the unconscious efect of planning at a number of different levels simultaneously. Clearly a greater proportion of the total time is spent in talk during conversation than in acting.

INTERPRETATION: The general trend to emerge from Table Four is that silences between speech bursts are longer in acting than in reading aloud, and longer in reading aloud than conversation. In addition silence occupies a larger proportion of the text time in acting than in reading aloud, and a smaller proportion of the time in conversation than in reading aloud.

SUMMARY AND CONCLUSION

This study of 10 amateur actors performing in three discourse styles points to some significant differences in at least two prosodic dimensions: fundamental frequency and silence. Acting is highest in terms of mean fundamental frequency, conversation lowest with reading aloud intervening. Acting shows the greatest amount of fluctuation around the mean fundamental frequency value, that is the greatest use of potential pitch range, and conversation the least with reading aloud intervening. The duration of silences between speech bursts is greatest in acting and shortest in conversation, with reading aloud intervening. Speech articulation occupies the greatest amount of text time in conversation, and the smallest in acting, again with reading aloud intervening.

In general terms, these facts indicate that acted material has two prosodic characteristics which may facilitate comprehension by non-native speakers. It is more differentiated in terms of exploitation of pitch range and heightened pitch level, and the smaller proportion of talk to total text means that the listener has less information to cope with per unit of time. The longer silences are likely to facilitate (retrospective) decoding, since each speech chunk is followed by additional potential processing time. Conversation on the other hand displays a lower mean fundamental frequency and smaller pitch range exploitation. In other words it is less differentiated in terms of pitch than acting. In addition the shorter silences and the greater proportion of talk time in total text in conversation effectively increase the cognitive load for the non-native learner by increasing the amount of speech per unit of time.

The conclusion to be drawn from this study is that contrasting

discourse styles or genres do possess distinctive prosodic characteristics, and that conversation material is likely to be more difficult than certain other discourse categories. This is not, of course, a reason for withholding conversation material from listening comprehension tasks. Rather it provides an additional rationale for selecting and ordering materials. Other criteria will also be important, of course.

In view of the fact that lecture materials have found a place in many EAP/ESL courses it would be worthwhile extending the analysis reported here to lectures, with particular attention to the relationship between prosodic variation and the nature of the audience. Future work is planned in this direction.

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